

**REMARKS:**

In the Office Action dated March 28, 2008, claims 1-18, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks. Claims 1-7 and 9-18 remain in this application, claim 8 has been canceled and new claims 19 and 20 have been added to the application.

The title was objected to as not descriptive. A new, more descriptive title has been added to the application.

The disclosure was objected to due to the term "witness". This term is commonly used in Mexico to indicate the "control". In order to clarify the disclosure, the term "witness" has been deleted and replaced with the term "control". In view of these amendments, applicants request that this objection be withdrawn.

Claims 1-2, 5-6 and 9 were rejected under 35 USC §102(b) as anticipated by Kirilishin. Applicants point out that the binder material described in Kirilishin is a mixture comprising ground sand with a superficial area (BET) from 1,000 to 5,000 cm<sup>2</sup>/g and by a crystalline sand modification that contains cristobalite (C) and/or tridimitite (T) with a particle size of 0.315 to 1.25 mm. Thus, Kirilishin's binder material is a mixture of materials and not a homogeneous material as is the microsilica of the present invention. The lack of homogeneity of the binder material described by Kirilishin is also clear from the fact that each one of the materials which are included has a different size particle. Applicants point out that the superficial area (BET) of the ground sand in the material of Kirilishin is at

least 50 times greater than the BET of the material of the present invention, and the particle size of the crystalline modification (C-T) is at least 100 times greater than the particle size of the material in the invention. Claim 1 has been amended to clarify the particle size of the material according to the present invention by reciting the limitations of original claim 8.

In addition, Kirilishin indicates that the effect of chemical resistance and water resistance that provides the binder material with C-T when mixing itself with cement depends on the existence of alkaline metal oxides in the material. These oxides are generated from mixing quartz sand with alkaline metal hydroxides or alkaline metal carbonates (see examples 2 and 7)and later calcining these mixtures at 1,000 – 1,500 °C. The resulting material contains 0.5 to 6 Mol percent of alkaline metal oxides. This can be verified by column 4, lines 24 to 30 of Kirilishin, which indicates that reducing the amount of alkaline metal oxides in the binder material to below 0.5 mol, may have a harmful effect in that "hardening of the binder in the concrete may cease". Also in column 4, lines 16 to 23, Kirilishin mentions that the oxides in the binder material improve "the water resistance of a chemically resistant concrete in comparison with concrete made with the use of the known silica based binder compositions". One skilled in the art would conclude that the cement improvement disclosed by Kirilishin depends on the existence of the crystalline sand modification that contains C-T as well as of the existence of 0.5 to 6 mol percent of alkaline metal oxides in the surface of the binder material. In contrast to Kirilishin, the microsilica of the present invention does not contain any type of alkaline metal oxides in its surface. As

demonstrated throughout the present disclosure the improvement in the properties of the concrete cement when the microsilica of the present invention is used depends on the amount of C-T that contains the material and not the existence of alkaline metal oxides in its surface. In view of the above discussed differences and the above amendments, applicants contend that the presently claimed invention is not anticipated by Kirilishin and request that this rejection be withdrawn.

Claims 1-9 were rejected under 35 USC §102(b) as anticipated by JP2001-003034. JP2001-003034 discloses an abrasive material with improved abrasive characteristics such as better resistance and transparency that contains cristobalite (C) and/or tridomite (T) in its composition. JP2001-003034 does not indicate that the abrasive material has pozzolanic activity nor that it can be mixed with cement to improve its cementitious characteristics (e.g. compressive strength). In addition, JP2001-003034 mentions that to obtain the described material, a minimum amount of 50% in weight of tridomite (50-100 wt %) is required but the amount of cristobalite in the composition can be as low as 0 (0-50 wt %). Unlike the abrasive material described in JP2001-003034, the microsilica of the present invention exhibits a defined and identifiable pozzolanic activity, since it improves the properties of the cements that are mixed with it. In the microsilica of the present invention, a minimum amount of 55 wt % of C-T is necessary, without this minimum percentage of these crystalline modifications, it is not possible to observe the improved pozzolanic activity of the material. In the present invention, a maximum amount of C-T is described (90 wt %) to retain the

pozzolanic activity, whereas in JP2001-003034 it is disclosed that the abrasive material can be made up entirely of C-T. JP2001-003034 also indicates that to obtain the material described with abrasive properties, a material of silica with at least 95 wt % of SiO<sub>2</sub> must be used, whereas the pozzolanic effect of the microsilica of the present invention can be observed with only 85 wt % of SiO<sub>2</sub>.

In order to obtain the abrasive material of JP2001-003034, silica and diverse alkaline metal compounds (e.g. sodium carbonate) are mixed and calcined at high temperatures (800-1,500°C) under conditions which are identical to the conditions described in Kirilishin, which would result in the generation of C-T and alkaline metal oxides in the obtained abrasive material. This process would yield an abrasive material which contains tridimitite, cristobalite and at least 0.5 to 6 mol percent of alkaline metal oxides. In contrast to this, high temperatures (800-1,500°C) are not necessary for producing the material according to the present invention and thus, the addition of alkaline metal compounds as catalytic substances can be avoided. Therefore, the alkaline metal oxides that form in the material described in JP2001-003034 do not exist in the presently claimed pozzolanic material. Claim 1 has been amended to clarify that the microsilica according to the present invention does not contain significant amounts of alkaline metal oxide. This limitation is supported by the disclosure at pages 17-18, paragraph [0091] and table no. 8. Table no. 8 shows a composition which does not contain Na<sub>2</sub>O and only contains 0.06% w/w of K<sub>2</sub>O, equivalent to 0.00063 Mol percent of the same compound, that is to say 1,000 times less the alkaline metal oxide concentration that would be expected in the

material described in JP2001-003034. Since JP2001-003034 indicates that the silica material is mixed with an alkali metal or alkaline earth metal compound and then fired at 800-1500° C, the material disclosed in JP2001-003034 would have significant amounts of alkaline metal oxides. In view of the above amendments and the discussion, applicants request that this rejection be withdrawn.

Claims 1-18 were objected to because of the language "characterized because". This language has been deleted from the claims. In view of these amendments, applicants request that this objection be withdrawn.

Claims 1-18 were rejected under 35 USC §112, second paragraph, as indefinite. Claims 1-18 have been amended to clarify the language found indefinite. In view of these amendments, applicants request that this rejection be withdrawn.

Applicants respectfully submit that all of claims 1-18 are now in condition for allowance. If it is believed that the application is not in condition for allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fee for such an extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 02-2135.

Respectfully submitted,

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